

IN THE CLAIMS:

The text of all pending claims are set forth below. Cancelled and withdrawn claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striethrough~~. The status of each claim is indicated with one of (original), (currently amended), (previously amended), (cancelled), (withdrawn), (new), (previously added), (reinstated - formerly claim #), (previously reinstated), (re-presented - formerly dependent claim #) or, (previously re-presented).

Please AMEND the claims in accordance with the following:

1. (CURRENTLY AMENDED) A multicast distribution system for transmitting and receiving a packet(s), ~~said the~~ multicast distribution system comprising:

at least one router connected with a cable;

at least one node having an interface connected to ~~each of said routers~~ the at least one router; and

a relay unit provided either in ~~said the at least one~~ router or in ~~said the at least one~~ node, which

wherein the relay unit relaying-relays a packet having a packet header including a destination address list of that indicates a plurality of destination addresses and its a undistributed-distribution bit map including a plurality of bits each corresponding to a respective destination address to which the packet is to be transferred and indicating whether or not the packet has already been distributed to its respective destination address, to the packet header to be transferred according to the in a unicast route.

2. (CURRENTLY AMENDED) The multicast distribution system ~~of packet~~ according to claim 1, wherein ~~in the case of distributing a same packet to a plurality of destinations, when transmitting the at least one node~~ comprises a node that transmits the packet having the packet header including a list of the destination addresses list and the distribution-undistributed bit map by storing in a packet header, said node inspects the a packet transmitted by itself and reaching that reached the own interface, and accepts the packet that reached when the packet header includes the destination address of the own node is included in the destination address list thereof.

3. (CURRENTLY AMENDED) The multicast distribution system of packet according to claim 1, further comprising a transmitter which transmits the packet having the packet header including a the destination address list of that includes the plurality of destination addresses and the distribution undistributed bit map by storing in a packet header including the plurality of bits corresponding to the destination addresses, in the case of distributing a same packet to the plurality of destinations,

~~wherein said router, when the transmitter relays the packet transmitted together with a branching regularity mark, searches a route table about two nodes at both ends of a row not distributed in the undistributed bit map, and omits route search about other address when branching is not necessary, and searches the route table about all destinations only when branching is necessary.~~

4. (CURRENTLY AMENDED) The multicast distribution system of packet according to claim 1, wherein when branching the packet, the value of a bit representing an the address to which the packet has been distributed already is changing changed into a value which is renders meaningless as anthe address and then the packet is distributed as to further distribution of the packet.

5. (CURRENTLY AMENDED) A node provided in a multicast distribution system for transmitting and receiving a packet(s) having a packet header, said the node comprising:

a memory which stores

a list of a plurality of destination addressees; addresses,

an undistributed a distribution bit map including a plurality of bits each corresponding to a respective destination address to which the packet is to be transferred and indicating whether or not the packet has already been distributed to its respective destination address; and

a transmitter which writes the list and the bit map into the header of the packet and transmits transmitting said list and said bit map by storing them in a the packet header.

6. (CURRENTLY AMENDED) A router provided in a multicast distribution system, ~~having a node which transmits a list of destination addressees and an undistributed bit map,~~ for transmitting and receiving a packet(s) having a packet header, said the router comprising:

a node which includes
a memory which stores,
a list of a plurality of destination addresses, and a distribution bit map
including a plurality of bits each corresponding to a respective destination address to which the
packet is to be transferred and indicating whether or not the packet has already been distributed
to its respective destination address; and

a transmitter which writes the list and the bit map into the header of the packet and
transmits the packet;

a receiving means for receiving unit which receives a packet transmitted with a branching
regularity mark indicating that the bits in the distribution bit map are sequentially arranged such
that bits indicating undistributed nodes are continuously arranged; and

a searching means for searching unit which searches a route table provided in the router
about two nodes at both ends of a row not distributed in the ~~undistributed~~ distribution bit map,
omitting route search about other address when branching is not necessary, and searching the
route table about all destinations only when branching is necessary.

7. (NEW) The multicast distribution system according to claim 3, wherein the
transmitter creates a branching regularity mark indicating that the bits in the bit map are
sequentially arranged such that bits indicating undistributed nodes are continuously arranged,
and transmits the packet together with the branching regularity mark.

8. (NEW) The multicast distribution system according to claim 7, wherein when the
router relays the packet having the branching regularity mark transmitted by the transmitter, the
router searches a route table provided therein about two nodes at both ends of a row of nodes
whose address are in the route table, the bits corresponding to the two nodes being indicated as
not yet distributed in the distribution bit map, and omits route search about the remaining
addresses when branching is not found necessary, or searches the route table about all the
destinations only when branching is found necessary as a result of the route search.

9. (NEW) The multicast distribution system according to claim 7, wherein the
transmitter transmits a branch search packet having an address list for searching for presence of
branching in distribution route in which the packet is distributed, receives at least one packet

including data on the result of the searching, and creates based on the data a bit map in which the bits corresponding to the addresses in the address list in the search packet are arranged sequentially such that bits indicating undistributed nodes are continuously arranged.

10. (NEW) The multicast distribution system according to claim 9, wherein the router searches about a route table provided therein in response to the request in the branch search packet transmitted by the transmitter, and relays the packet after adding the distribution bit map to an undistributed route list until the packet reached to the own router when branching the packet, or relaying the branch search packet directly if no branching is necessary.

11. (NEW) The multicast distribution system according to claim 10, wherein further comprising a node that relays the packet and includes a client that returns the undistributed route list of the branch search packet directly to the transmitter.

12. (NEW) The multicast distribution system according to claim 1, further comprising a transmitter which transmits a route search packet for requesting the at least one router to search a route table provided therein and return a result of the search to the transmitter.

13. (NEW) The multicast distribution system according to claim 12, wherein the router receives the route search packet from the transmitter, searches the route table provided therein, and relays the route search packet after adding a distribution bit map to the end of an undistributed route list indicating bits for representing undistributed destinations until the own router is reached when branching is found necessary, or the router relays the route search packet as it is when no branching is found necessary in the route.

14. (NEW) The multicast distribution system according to claim 13, further comprising a node that relays the packet and includes a client that returns the undistributed route list of the route search packet directly to the transmitter.

15. (NEW) The multicast distribution system according to claim 13, wherein in the case where the router finds that a plurality of routes to a neighbor router exist, indicated by only one or two destination addresses, as a result of route table search, the router relays the packet

only to one such route that is indicated by two addresses or two such routes each of which indicated by only one address and omits relaying the packet to the balance of the routes.

16. (NEW) The multicast distribution system according to claim 1, further comprising a transmitter capable of adding or deleting at least one destination address from or to the destination address list during transmission of a series of packets.

17. (NEW) The multicast distribution system according to claim 16, wherein the transmitter searches route about the at least one destination address added and keeps the bits in the bit map sequentially arranged such that bits indicating undistributed nodes are continuously arranged.

18. (NEW) The multicast distribution system according to claim 1, further comprising a transmitter that transmits a regularity inspection packet for checking whether or not the destination address list is in branching regularity where the bits in the bit map are sequentially arranged such that bits indicating undistributed nodes are continuously arranged, and rearranges the bits when the transmitter receives a notice indicating that the bits are not in branching regularity from the at least one router.

19. (NEW) The multicast distribution system according to claim 18, wherein the router receives the regularity inspection packet, searches the route table provided therein for the destination address list in the regularity inspection packet, and returns to the transmitter an irregularity notice notifying that the bits are not in branching regularity when the branching regularity is broken, and relays the regularity inspection packet otherwise.

20. (NEW) The multicast distribution system according to claim 19, wherein the transmitter and the router writes in the header of the packet an address of one node, the bit in the bit map of which has a value indicating an undistributed state as a former address of the packet.

21. (NEW) A method of multicast routing, comprising:
multicasting a multicast packet to multicast destinations using only unicast routing to

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route the multicast packet to the multicast destinations, where the multicast packet self-describes the multicast destinations.
